DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-016130
Date Inspected: 03-Aug-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 700
Location: Shanghai, China

CWI Name:	See Below			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG

Summary of Items Observed:
CWI Inspector: Mr. Liu Hua Jie

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Segment Trial Assembly

This QA Inspector observed ZPMC CWI Mr. Lu Hua Jie had documented that welder Mr. Han Yiaofeng, stencil 054467 used shielded metal arc welding procedure WPS-345-SMAW-2G(2F)-Repair-1 to make shielded metal arc repair weld CA066-001 as authorized on critical weld repair document B-CWR1738. This weld had been ultrasonically rejected and is located at OBG segment 9EE in the trial assembly area. This QA Inspector observed the welding parameters recorded by Mr. Lu Hua Jie appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Zhong Hua, stencil 053753 used shielded metal arc procedure WPS-345-SMAW-2G(2F)-FCM-Repair-1 to make repairs to weld SEG056B-066. This weld repair was authorized by weld repair document WR14137. This QA Inspector observed a welding current of approximately 175 amps, ZPMC appeared to have used electric heating elements to preheat the base material prior to welding and Mr. Wang Zhong Hua appeared to be certified to make this weld. Items observed on this date appeared to

generally comply with applicable contract documents.

As this QA Inspector approached the area where ZPMC welder Mr. Wu Jun was welding the “Industrial Scientific Model M40” air monitor, which this QA Inspector was carrying, alarmed and the display indicated a carbon monoxide (CO) value of approximately 45 to 50. This QA Inspector informed ABF representative Mr. Kelvin Cheung of the potential health hazard due to high levels of carbon monoxide. See the photograph below for additional information. Approximately 20 minutes later this QA Inspector returned to this location and observed the breathing air monitor had an intermittent alarm and the digital display showed the upper CO levels to vary between 20 and 30, with occasional spikes to 35. This QA Inspector observed ZPMC welder Mr. Wu Jun stencil 053486 used flux cored arc procedure WPS-B-T-2231-B-U2-F to make OBG segment 9CW weld SEG053A-012 and segment 9DW weld SEG0555A-045. These welds join the cross beam side plate to the bottom plate between panel points PP079 and PP080. This QA Inspector observed a welding current of approximately 275 amps, 29.5 volts and Mr. Wu Jun appeared to be certified to make these welds. Items observed on this date appeared to comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wu Wen Kai, stencil 500433 used shielded metal arc welding procedure WPS-B-P-2213-B-U2-FCM-1 to make tack welds between various “T” stiffener plates on the cross beam side plate where OBG segment 9DW joins 9EW near panel point PP82. This QA Inspector measured a welding current of approximately 160 amps, the base material adjacent to this weld was preheated with a torch and Mr. Li Jin Quan appeared to be certified to make this weld. Prior to tack welding ZPMC workers used a mechanical jack to obtain alignment of the “T” stiffener plates. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Li Jin Quan, stencil 040667 used shielded metal arc welding procedure WPS-B-P-2213-B-U2-FCM-1 to make welds between various “T” stiffener plates on the bottom plate where OBG segment 9DW joins 9EW near panel point PP82. This QA Inspector measured a welding current of approximately 170 amps, the base material adjacent to this weld was preheated with a torch and Mr. Li Jin Quan appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Guo Hui, stencil 046720 used shielded metal arc procedure WPS-B-P-2112-FCM-1 to make tack weld CA065-001. This hold back weld is located between the corner assembly side plate and the edge plate. This QA Inspector observed the area where one of the tack welds was deposited appears to have been flame cut and the flame cut oxide surfaces do not appear to have been ground to obtain a bright metal surface. This QA Inspector showed ZPMC QC Inspector Mr. Wang Zhu the flame cut area where the tack weld had been made and Mr. Wang Zhu informed this QA Inspector that he will ensure the tack weld is ground out and that the weld joint is ground to a bright metal condition prior to any additional welding. This QA Inspector observed the welding electrodes were being stored in a portable rod oven which was connected to an electric power cable. This QA Inspector measured a welding current of approximately 160 amps and Mr. Guo Hui appeared to be certified to make these tack welds. Items observed on this date do not fully appear to comply with applicable contract documents. See the photographs below for additional information.

This QA Inspector observed ZPMC welder Mr. Huang Jian, stencil 069841 used shielded metal arc welding procedure specification WPS-345-SMAW-4G(4F)-Repair-FCM-1 to complete weld repair seg055A-021 as

directed by weld repair document B-CWR1728. This butt weld joins OBG 9DW side to bottom plate. This QA Inspector observed a welding current of approximately 140 amps and the base material appears to have been preheated with an acetylene torch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Xu Zichuan, stencil 205098 used shielded metal arc welding procedure specification WPS-345-SMAW-1G(1F)-FCM-Repair-1 to complete weld repair OBW9B-003 which had been visually rejected. This butt weld joins OBG 9BW and 9CW top deck plates near panel point PP076. This QA Inspector observed a welding current of approximately 145 amps, the base material appeared to have been preheated with a torch and that Mr. Xu Zichuan appeared to be certified to perform this welding. Mr. Xu Zichuan did not appear to have any portable flashlight or other light to illuminate the area where was welding. The only light where he was welding was from remote overhead light sources. This QA Inspector asked ZPMC CWI Mr. Liu Hua Jie if there was enough light for the welder to see that the welding slag from the previous pass was removed prior to starting the next weld pass. Mr. Liu Hua Jie told Mr. Xu Zichuan to stop welding and for him to get a light prior to performing any additional welding. Items observed on this date do not appear to fully comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Jiang Zhen, stencil 068917 used flux cored welding procedure WPS-B-T-2231T-1 to make OBG segment OBW9K-005. This QA Inspector measured a welding current of approximately 300 amps and 31.2 volts and the base material appears to have been preheated with an electric heating element. This QA Inspector observed that Mr. Jiang Zhen appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

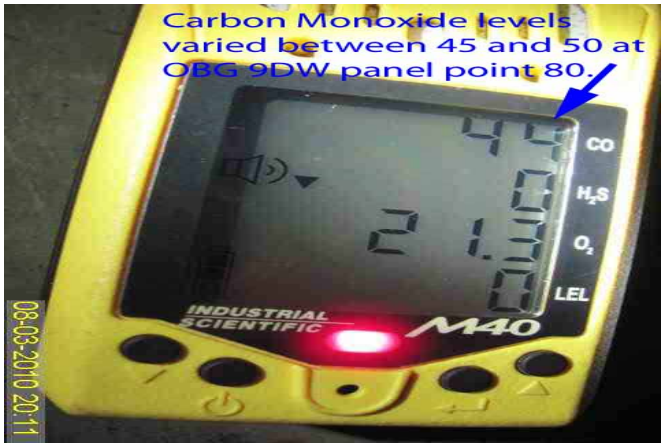
This QA Inspector observed ZPMC welder Mr. Yu Hui Ye, stencil 45143 used flux cored welding procedure specification WPS-B-T-2132 to perform weld CB206-011-003. This weld is located inside OBG cross beam CB11. This QA Inspector observed the welding parameters recorded by ZPMC QC Inspector Mr. Zhu Yuan Yuan appeared to comply with the WPS. Items observed on this date appeared to generally comply with applicable contract documents.

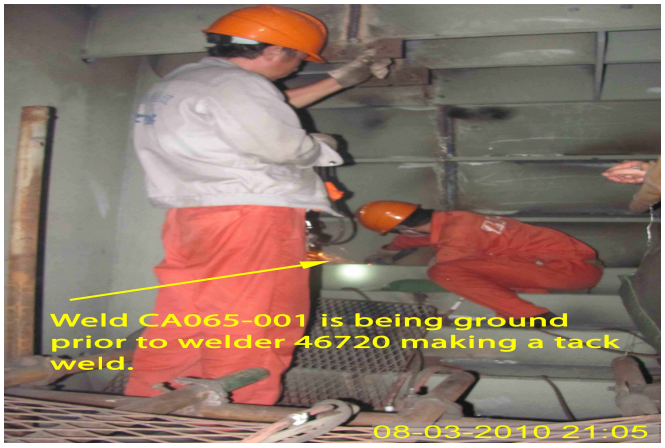
This QA Inspector observed ZPMC welder Mr. Hao Jianxiang stencil 067665 used shielded metal arc welding procedure specification WPS-B-P-2114-FCM-1 to perform weld FB027-001-011. This weld is located inside OBG cross beam CB11. This QA Inspector observed ZPMC QC Inspector Mr. Zhu Yuan Yuan has recorded a welding current of 156 amps. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Ni Leijiang stencil 037723 used shielded metal arc welding procedure specification WPS-B-P-2114-FCM-1 to perform weld FB027-001-011. This weld is located inside OBG cross beam CB11. This QA Inspector observed ZPMC QC Inspector Mr. Zhu Yuan Yuan has recorded a welding current of 152 amps. Items observed on this date appeared to generally comply with applicable contract documents.

WELDING INSPECTION REPORT

(Continued Page 4 of 4)





Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer